

0235, Fort Wayne Community Schools

PROJECT ABSTRACT

Cadre 2 offers an opportunity to greater implement Project Lead the Way in FWCS. PLTW will improve classroom teaching and student learning offered at Northrop for Engineering or Snider for Biomedical Sciences as indicated in their technology plans. This implementation could select 1 to 1 laptops, desktops, or a combination depending on curricular requirements.

This grant will help reduce the shortage of real-time streaming capabilities; virtualization; and capable workstations/tablets to fully support the ideal collaborative environment needed to successfully maintain and sustain these programs; increase rigor, relevance, and productivity through expanding our software offerings and project-based learning capabilities; and integrate 21st century technology.

We expect Biomedical Sciences and Engineering to attract under-represented students to the fields. Over the last year this recruitment effort has been a district-wide focus. For the past two years Northrop, home to PLTW Engineering, has been offering co-taught classes in math and science to increase math proficiency so students are better prepared for the math needed in engineering. Snider, home to PLTW Biomed, began a book study with "The Pact" written by three African-American males, now doctors, describing the trials they faced growing up in poverty and the pact they entered into to become doctors. This led to pacts being created amongst the students at Snider. The three doctors then presented to all FWCS students, parents and community people, and meet specifically with Snider's students. This resulted in collaborative work, book studies, and recruitment of minority students through local neighborhood youth organizations. This math, science, and reading integration along with project-based learning is certain to translate into higher under-represented student success and enrollment in STEM and AP courses.

FWCS has also provided professional development to all counselors better preparing them to guide students in the selection of courses including STEM and AP and career and college opportunities. The work with counselors has included an assessment of FWCS K-12 counseling program and recommendations by Doug Manning the creator of the Bridges Career Pathway assessment, a realignment of the counseling structure to place a dedicated counselor in the ninth grade and more emphasis on career awareness and readiness to learn, development of 6 year meaningful future plans for all middle and high school students, and better collaboration between middle and high school counselors.

FWCS will implement the full complement of PLTW courses for engineering and biomedical sciences. By using innovative technology, our students can learn anytime, anywhere and collaborate with experts and peers. Students will have access to laptops for projects both at school and from home. Students and teachers have a need for software applications and technology equipment that are not currently available at FWCS. Project-based instruction, as required by PLTW, is not limited to the classroom. Multi-media presentation systems will be used for teacher instruction and student project presentations. For example, teachers and students can show the functioning and labeling of body organs and digital design enhancements. Since some courses have no textbooks, students must access the internet every day to research information for their projects. Engineering students will be required to use CAD software to diagram and model. Software that simulates bridge construction and load testing will be used to emphasize physics concepts. Robotics will also be included. Students will be required to design, build, test, and demonstrate the functionality of their robots. Biomedical students will be using LabVIEW software along with Vernier probes (e.g., EKG, heart rate, blood pressure, temperature, and carbon dioxide gas) to collect and analyze data.